

WHAT IS CLAIMED IS:

1. A method of manufacturing a bit line, the method comprising the steps of:

5 successively forming a conducting layer and a hard mask on a substrate, the conducting layer serving to form a bit line ;

forming a first mask pattern on the hard mask in such a manner that a desired region of the hard mask is exposed;

10 isotropic dry etching the first mask pattern, so as to form a second mask pattern;

etching the hard mask using the second mask pattern;

removing the second mask pattern; and

etching the conducting layer using the remaining hard mask, so as to form the bit line.

2. The method as claimed in claim 1, wherein the step of forming the first mask pattern is carried out by etching a photoresist film using a photolithography process.

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3. The method as claimed in claim 1, wherein the step of etching the first mask pattern to form the second mask pattern is carried out through isotropic dry etching of the first mask pattern.

4. The method as claimed in claim 3, wherein the isotropic dry etching is carried out with plasma dry etching equipment, which uses a microwave energy source.

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5. The method as claimed in claim 3, wherein the isotropic dry etching is carried out while oxygen gas is supplied.

10 6. The method as claimed in claim 5, wherein the isotropic dry etching is carried out while CF_4 gas is supplied, in addition to the oxygen gas.

7. The method as claimed in claim 5, wherein the
15 oxygen gas is supplied at a flow rate of 350 to 450 sccm.

8. The method as claimed in claim 5, wherein the oxygen gas is supplied at a flow rate of 800 sccm.

20 9. The method as claimed in claim 3, wherein the isotropic dry etching is carried out using a source of power of less than 400 Watts.

10. The method as claimed in claim 3, wherein the

isotropic dry etching is carried out using a source of power of 200 to 300 Watts.

11. The method as claimed in claim 3, wherein the
5 isotropic dry etching is carried out using a pressure of 600
to 1000 mT.

12. The method as claimed in claim 1, wherein in the
step of successively forming the conducting layer and the
10 insulating layer, the insulating layer is formed of an oxide
film or a nitride film.

13. The method as claimed in claim 1, wherein in the
step of successively forming the conducting layer and the
15 insulating layer, the conducting layer is made from a
material selected from the group consisting of tungsten and
tungsten silicide.

14. The method as claimed in claim 1, wherein the step
20 of etching the first mask pattern to form the second mask
pattern is carried out by etching the first mask pattern at
an etching rate of less than 3000 Å thickness per minute.